

### **REMARKS**

Claims 12 and 14-19 are pending in the instant application. Claims 12 and 14 have been amended to specify that Y is selected from the group consisting of 5-hydroxycytosine, 5-hydroxymethylcytosine, N4-alkylcytosine and 4-thiouracil and Z is selected from the group consisting of guanosine, 2'-deoxy-guanosine, 7-deazaguanosine and 6-thioguanosine. Each basis for rejection is separately addressed below.

#### **Rejoinder**

Applicants respectfully request that Claims 15-19, previously withdrawn as being directed to non-elected species, be rejoined herein. Claims 15-19 depend from and, thus, require all the limitations of Claim 12.

#### **Written description**

Claims 12, 14 and 18 are rejected for lack of written description based on the breadth of the terms Y and Z. These terms have been narrowed to the actual embodiments shown in the specification. Accordingly, Applicants respectfully submit that these amendments have overcome this rejection.

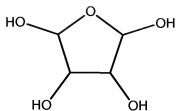
#### **Anticipation Under 35 U.S.C. §102: Cook**

Claims 12 and 18 are rejected under 35 U.S.C. 102 as being unpatentable over US Patent No. 5599707 ("Cook") as further evidenced by the instant specification and Stein and Cheng ("Stein"). Cook is relied upon as teaching introducing a 1', 2'-dideoxyribose into an immunostimulatory oligonucleotide. Applicants' specification is relied upon as teaching the structure of 1', 2'-dideoxyribose in Figures 1-3. Stein is relied upon as showing the structure of a phosphorothioate linkage in its Figure 1.

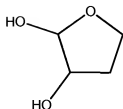
As discussed in the interview, what Cook and Stein both teach is a 2'deoxyribonucleotide phosphorothioate, in contrast to the claimed 1', 2'-dideoxyribose.

The structures of ribose, 1', 2'-dideoxyribose, and a 2'deoxyribonucleoside are shown here.

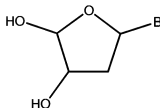
Ribose



1', 2'-dideoxyribose



2'-deoxyribonucleoside



The 1' position is the first carbon atom clockwise from the ring oxygen. The 2' position is the second carbon atom clockwise from the ring oxygen. In ribose, the 1' and 2' positions are both substituted with hydroxy groups. In 1', 2'-dideoxyribose, the oxygen is removed from the 1' and 2' positions (hence "dideoxy"), and all that remains at the 1' and 2' positions are hydrogen atoms. In Cook and Stein, the oligonucleotides contain 2'-deoxyribonucleosides, in which the 1' position is substituted with a base, either adenine, cytosine, guanine, or thymine (shown both here and in Stein as "B"), while the 2' position is only hydrogen atoms.

Thus, clearly, neither Cook, nor Stein teaches the recited 1', 2'-dideoxyribose element of claim 12 or 18. Accordingly, Cook cannot anticipate claim 12 or 18. Therefore, Applicants respectfully request that this rejection be withdrawn.

Anticipation Under 35 U.S.C. §102: Weiner

This rejection has the same deficiencies as described for Cook. Therefore, Applicants respectfully request that this rejection be withdrawn.

Obviousness under 35 U.S.C. §103: Cook/Stein and Cheng

This rejection has the same deficiencies as described for Cook. Therefore, Applicants respectfully request that this rejection be withdrawn.

Obviousness under 35 U.S.C. §103: Weiner/Cook/Stein and Cheng

This rejection has the same deficiencies as described for Cook. Therefore, Applicants respectfully request that this rejection be withdrawn.

Obviousness-type double patenting

Claims 12, 14, 39 and 40 are provisionally rejected for obviousness-type double patenting over various claims of co-pending applications 10/865,245 and 10/694,418. Because these applications are, respectively, later filed or of even filing date with the present application and have not been allowed, once all other presently maintained rejections are overcome, this application should be passed to allowance and any terminal disclaimers or other appropriate actions should be made in the cited applications. See MPEP 804.B.1.

Claims 12 and 14 are also rejected for obviousness-type double patenting over U.S. Patent No. 7,262,286. Claim 1 of this patent recites:

An isolated immunostimulatory oligonucleotide compound, comprising an immunostimulatory dinucleotide of formula C\*pG, wherein the immunostimulatory oligonucleotide compound is at least 6 nucleotides in length, and wherein C\* is a cytidine analog selected from the group consisting of 5-hydroxycytosine, 5-hydroxymethylcytosine, N4-alkylcytosine and 4-thiouracil, G is guanosine, 2'-deoxyguanosine, or a guanosine analog, and p is an internucleotide linkage selected from the group consisting of phosphorothioate, and phosphorodithioate.

Claim 1 of this patent thus does not teach or suggest the positional modifications of claims 12 or 14. For purposes of obviousness-type double patenting, it is only what the claim of the recited reference teaches or suggests that is relevant, not what the specification teaches or

suggests. Claims 1-4 of the cited patent do not include 1,2-dideoxyribose (where the base of the nucleoside is replaced by hydrogen) at all. Moreover, phosphorothioate is not one of the specific immunostimulatory moieties recited at any of the respective recited positions of claim 12 or 14.

Accordingly, Applicants respectfully request that this rejection be withdrawn.

### **CONCLUSION**

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner believes that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned attorney at 207-791-3078.

Respectfully submitted,

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